MAY 2 3 2011

TSRH® Spinal System
510(k) Summary
March 2011

I. **Company:** Medtronic Sofamor Danek USA, Inc.
1800 Pyramid Place
Memphis, TN 38132
(901) 396-3133

Contact: Kevin Ford
Regulatory Affairs Manager

II. **Proposed Proprietary Trade Name:** TSRH® Spinal System

III. **Classification Names**

Spinal Interlaminal Fixation Orthosis, Spinal Intervertebral Body Fixation Orthosis, and Pedicle Screw Spinal System.
Class: II, III
Product Code(s): KWP, KWQ, MNI, MNH and NKB
Regulation No.: 888.3050, 888.3060, 888.3070

IV. **Description**

The purpose of this Special 510(k) is to add additional sizes of Unit Rods and S-Rods to the TSRH® Spinal System.

The TSRH® Spinal System is intended to help provide immobilization and stabilization of spinal segments as an adjunct to fusion of the thoracic, lumbar, and/or sacral spine.

The TSRH® Spinal System consists of a variety of shapes and sizes of rods, hooks, screws, cross connectors, staples, plates and connecting components as well as implant components from other Medtronic spinal systems, which can be rigidly locked into a variety of configurations, with each construct being tailor-made for the individual case.

Certain implant components from other Medtronic spinal systems can be used with the TSRH® Spinal System. These components include GDLH® rods, rod/bolt connectors, Variable Angle T-Bolts, set screws and locking screws; DYNALOK® PLUS™ bolts, CD HORIZON® Low Profile MULTI-SPAN® CROSSLINK® Plates, VANTAGE™ Anterior Fixation System screws, and CD HORIZON® rods, screws, set screws and locking screws.

The hooks are intended for posterior use only and the staples are for anterior use only. The TSRH-3D® and TSRH-3Dx™ connectors and TSRH-3D® and TSRH-3Dx™ screws are intended for posterior use only. Within the TSRH® family, the cobalt chromium rods should only be used with TSRH® 3Dx™ Spinal System. All CROSSLINK® Plates are for posterior use and the CROSSLINK® Axial and Offset Plates may be used anteriorly as well.

The TSRH® Spinal System implant components are fabricated from medical grade stainless steel, medical grade titanium or titanium alloy, and/or medical grade cobalt-chromium-molybdenum alloy. Medical grade titanium, titanium alloy, and/or cobalt-chromium-molybdenum alloy may be used together. Certain TSRH® Spinal System components may be coated with hydroxyapatite. The TSRH® Spinal System may be sold sterile or non-sterile.

V. Indications for Use:

When used as a pedicle screw fixation system of the non-cervical posterior spine in skeletally mature patients using bone graft, the TSRH® Spinal System is indicated as an adjunct to fusion for one or more of the following: (1) degenerative disc disease (defined as back pain of discogenic origin with degeneration of the disc confirmed by patient history and radiographic studies), (2) degenerative spondylolisthesis with objective evidence of neurologic impairment, (3) fracture, (4) dislocation, (5) scoliosis, (6) kyphosis, (7) spinal tumor, and/or (8) failed previous fusion (pseudarthrosis).

In addition, when used as a pedicle screw fixation system, the TSRH® Spinal System is indicated as an adjunct to fusion for skeletally mature patients: (1) having severe spondylolisthesis (Grades 3 and 4) of the fifth lumbar-first sacral (L5- S1) vertebral joint: (2) who are receiving fusions using autogenous bone graft only: (3) who are having the device fixed or attached to the lumbar and sacral spine (L3 and below); and (4) who are having the device removed after the development of a solid fusion mass.

When used as a posterior, non-cervical, non-pedicle screw fixation system, the TSRH® Spinal System is intended for the following indications: (1) degenerative disc disease (as defined by back pain of discogenic origin with degeneration of the disc confirmed by patient history and radiographic studies), (2) spondylolisthesis, (3) fracture, (4) spinal deformities (i.e., scoliosis, kyphosis, and/or lordosis), (5) spinal stenosis, (6) pseudarthrosis, (7) tumor resection, and/or (8) unsuccessful previous attempts at spinal fusion.

When used as a unilateral supplemental fixation device in the antero-lateral thoracic/lumbar region, the TSRH® L-Plate and VANTAGE™ screws are intended for the following indications: spondylolisthesis; trauma (i.e., fracture or dislocation); spinal stenosis; curvatures (i.e., scoliosis, kyphosis and/or lordosis); tumor; pseudoarthrosis; and/or failed previous fusion.

For anterior use only the TSRH® Spinal System has the additional indication of: spondylolysis.

VI. Identification of the Legally Marketed Predicate Devices Use to Claim Substantial Equivalence:

Documentation provided demonstrated that the subject Unit Rods and S-Rods are substantially equivalent to TSRH® Spinal System components manufactured by Medtronic Sofamor Danek and cleared by the FDA in K896603 (S.E. 01/30/1990), K982990 (S.E. 10/21/1998) and K021106 (S.E. 05/03/2002).

VII. Summary of the Technological Characteristics:

The purpose of this Special 510(k) is to add additional sizes of Unit Rods and S-Rods to the TSRH® Spinal System. The subject and predicate TSRH® Unit Rods and S-Rods are identical in terms of indications for use, intended use, performance specifications and technological characteristics. The key differences between the subject and predicate device are the additional length(s) and diameter(s).

VIII. Discussion of Non-Clinical Testing:

No non-clinical testing was performed.

IX. Discussion of Clinical Testing:

No clinical testing was performed.

X. Conclusions Drawn from the Non-Clinical and Clinical Tests:

Based on the documentation provided, the subject device is deemed substantially equivalent to the listed predicate devices.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
10903 New Hampshire Avenue
Document Control Room –WO66-G609
Silver Spring, MD 20993-0002

MAY 2-3 2011

Medtronic Sofamor Danek USA, Inc.
% Mr. Kevin Ford
Regulatory Affairs Manager
1800 Pyramid Place
Memphis, Tennessee 38132

Re: K110676
Trade/Device Name: TSRH Spinal System
Regulation Number: 21 CFR 888.3070
Regulation Name: Pedicle screw spinal system
Regulatory Class: Class III
Product Code: NKB, MNI, MNH, KWP, KWQ
Dated: April 28, 2011
Received: April 29, 2011

Dear Mr. Ford:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you; however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act

or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please go to http://www.fda.gov/AboutFDA/CentersOffices/CDRH/CDRHOffices/ucm115809.htm for the Center for Devices and Radiological Health's (CDRH's) Office of Compliance. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

for Mark N. Melkerson
Director
Division of Surgical, Orthopedic
and Restorative Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

510(k) Number (if known): K110676

Device Name: TSRH® Spinal System

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When used as a posterior, non-cervical, non-pedicle screw fixation system, the TSRH® Spinal System is intended for the following indications: (1) degenerative disc disease (as defined by back pain of discogenic origin with degeneration of the disc confirmed by patient history and radiographic studies), (2) spondylolisthesis, (3) fracture, (4) spinal deformities (i.e., scoliosis, kyphosis, and/or lordosis), (5) spinal stenosis, (6) pseudarthrosis, (7) tumor resection, and/or (8) unsuccessful previous attempts at spinal fusion.

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Prescription Use ___X___ (Part 21 CFR 801 Subpart D)	AND/OR	Over-The-Counter Use _____ (21 CFR 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Division Sign-Off)
Division of Surgical, Orthopedic,
and Restorative Devices

510(k) Number K110676